

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Air Division

Chapter 335-3-5
Control of Sulfur Compound Emissions.

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335-3-5-.01 Fuel Combustion.

- (1) (a) **Sulfur Dioxide Category I Counties.** No person shall cause or permit the operation of a fuel burning installation in a Sulfur Dioxide Category I County or in Jefferson County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 1.8 pounds per million BTU heat input. *(Amended March 25, 1975)*
- (b) **Sulfur Dioxide Category II Counties.** No person shall cause or permit the operation of a fuel burning installation in a Sulfur Dioxide Category II County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 4.0 pounds per million BTU heat input. *(Amended March 25, 1975)*
- (c) **Sulfur Dioxide - Jackson County.** No person shall cause or permit the operation of an electric utility steam generating installation having a total rated capacity greater than 5,000 million BTU per hour in Jackson County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 1.2 pounds per million BTU heat input. *(Adopted August 28, 1979)*
- (d) **Sulfur Dioxide - Colbert County.** No person shall cause or permit the operation of an electric utility steam generating installation having a total rated capacity greater than 1,000 million BTU per hour in Jackson County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 2.2 pounds per million BTU heat input.
1. Compliance with this paragraph shall be achieved no later than the dates in the following schedule:
- (i) Specification for emission control equipment shall be completed by October 1, 1987.
- (ii) Initiation of on-site construction shall begin by April 1, 1988
- (iii) Contracts for the emission control system shall be awarded by May 1, 1988.
- (iv) Contracts for compliance coal shall be awarded by February 1, 1990.

- (v) The first electric utility steam generating unit shall be in compliance with the paragraph by May 1, 1990.
 - (vi) The second electric steam generating unit shall be in compliance with the paragraph by August 1, 1990.
 - (vii) The third electric steam generating unit shall be in compliance with the paragraph by November 1, 1990.
 - (viii) The fourth electric utility steam generating unit shall be in compliance with the paragraph by January 1, 1991.
- (e) **Sulfur Dioxide - Shelby County.** No person shall cause or permit the operation of an electric utility steam generating installation having a total rated capacity greater than 5,000 million BTU per hour in Jackson County in such a manner that sulfur oxides, measured as sulfur dioxide, are emitted in excess of 3.8 pounds per million BTU heat input.
- (2) **Air Quality Demonstration.** In addition to the requirements of paragraph (1) of this Rule, every owner or operator of a fuel burning installation having a total rated capacity greater than 1500 million BTU per hour shall:
- (a) Demonstrate, to the satisfaction of the Director, that the sulfur oxides emitted, either alone or in contribution to other sources, will not interfere with attainment and maintenance of any primary or secondary ambient air quality standard prescribed at Rule 335-3-1-.03.
 - (b) Demonstrate, to the satisfaction of the Director, that in meeting the emission limitations of paragraph (1) of this Rule, the installation will not increase emissions to the extent that resulting air quality concentrations will be greater than:
 - 1. those concentrations (either measured or calculated) which existed in 1970; or
 - 2. those concentrations (either measured or calculated) which existed during the first year of operation of any installation which began operating after January 1, 1970.
 - (c) Upon the direction of the Director, install and maintain air quality sensors to monitor attainment and maintenance of ambient air quality standards in the areas influenced by the emissions from such installation. Results of such monitoring shall be provided to the Director in a manner and form as he shall direct.
- (3) For purposes of this Part, the total heat input from all similar fuel combustion units at a plant, premises, or installation shall be used for determining the maximum allowable emission of sulfur dioxide that passes through a stack or stacks. Units constructed and operated to conform with the New Source Performance Standards shall not be considered similar to other units at a plant, premises, or installation. (*Amended March 25, 1975*)
- (4) All calculations performed pursuant to demonstrations required by paragraph (2) of this Rule shall assume that the fuel burning installation is operating at or above the maximum capacity which such installation is capable of being operated. [*Submitted July 25, 1975, Approved May 27, 1976 (41 FR 21638)*]
- (5) No person shall cause or permit the emission or combustion of any refinery process gas stream that contains H₂S in concentrations greater than 150 ppm without removal of the hydrogen sulfide in excess of this concentration.

- (6) To ensure that ambient air quality standards are met, an annual review of Sulfur Dioxide Category I and II Counties will be made by the staff. Initial Sulfur Dioxide Category classifications and any subsequent changes to Sulfur Dioxide Category classifications will be the subject of a public hearing. (*Amended March 25, 1975*)

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

History: Effective date: January 18, 1972.

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2nd Revision	OCT 31, 1989	MAR 19, 1990	55 FR 10062
3rd Revision	OCT 30, 1996	AUG 05, 1997	62 FR 30991

335-3-5-.02 Sulfuric Acid Plants. (*Amended April 22, 1975*)

- (1) **Applicability.** For existing sulfuric acid plants operating as of January 18, 1972, the following applies:
- (1) No person shall cause or permit sulfur dioxide tail gas emissions from sulfuric acid manufacturing plants to exceed 27 pounds per ton of 100 percent sulfuric acid produced; provided, however, that no sulfuric acid manufacturing plant emitting less than 27 lbs. per ton of 100 percent sulfuric acid produced shall be allowed to increase its emission rate.
- (2) No person shall cause or permit tail gas acid mist emissions to exceed 0.5 pounds per ton of sulfuric acid produced, and the sulfur trioxide emissions are not to exceed 0.2 pounds per ton of sulfuric acid produced.
- (b) For all sulfuric acid plants not included in subparagraph (a) above, the following applies:
- (1) No person shall cause or permit the discharge into the atmosphere of sulfur dioxide in excess of 4 lbs. per ton of sulfuric acid produced, maximum two-hour average.
- (2) No person shall cause or permit the discharge into the atmosphere of acid mist which is in excess of 0.15 pounds per ton of acid produced, maximum two-hour average, expressed in H₂SO₄.
- (2) There shall be installed, calibrated, maintained, and operated in any sulfuric acid production unit subject to the provisions of this Part, an instrument for continuously monitoring and recording emissions of sulfur dioxide.
- (4) Any instrument and sampling system installed and used pursuant to this Part shall be subject to the approval of the Director.

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

History: Effective date: January 18, 1972.

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335-3-5-.03 Petroleum Processing

- (1) **Applicability.** This regulation applies to facilities that handle natural gas or refinery gas that contains more than 5 grains of hydrogen sulfide per 100 standard cubic feet.
- (2) No person shall cause or permit the emission of a process gas stream containing hydrogen sulfide into the atmosphere unless it is properly burned to maintain the ground level concentrations of hydrogen sulfide to less than 10 parts per billion.
- (3) No person shall cause or permit the sulfur oxide emission from any facility designed to dispose of or process natural gas containing more than 5 grains hydrogen sulfide per 100 standard cubic feet to exceed the following:

CATEGORY I COUNTIES

Available Sulfur (Long Tons/Day)	Permitted Emissions of Sulfur Dioxide
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Up to 5	No Limit
5 to 35	375 lbs/hour
35 to 75	5 percent of inlet
Over 75	4 percent of inlet

CATEGORY II COUNTIES

Available Sulfur (Long Tons/Day)	Permitted Emissions of Sulfur Dioxide
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Up to 10	No Limit
10 to 50	560 lbs/hour
50 to 100	5 percent of inlet

Over 100

4 percent of inlet

The allowable emissions, as a percent of plant inlet, are increased as follows to allow for dry acid gas streams containing less than 60 percent hydrogen sulfide:

Mol Percent of Hydrogen Sulfide in Dry Acid Gas	Additional SO ₂ Emissions Allowed
50% but less than 60%	.02 lbs. SO ₂ /lb. S processed
40% but less than 50%	.04 lbs. SO ₂ /lb. S processed
30% but less than 40%	.06 lbs. SO ₂ /lb. S processed
20% but less than 30%	.10 lbs. SO ₂ /lb. S processed
Less than 20%	Must utilize the best available control technology, with consideration to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility.

- (4) Applicability. In addition to the requirements of paragraph (3) of this Rule, the provisions of this paragraph apply to all natural gas processing facilities in Escambia County with capacities greater than 50 million standard cubic feet of sour gas per day.

- (a) No person shall cause or permit the emissions of total sulfur compounds, measured as sulfur dioxide, from any affected facility to exceed the following:

Available Sulfur (Long Tons/Day)	Permitted Emissions of Total Sulfur Compounds
Up to 575	0.140 pounds of total sulfur compounds per pound of available sulfur
575 to 1031	Pounds of total sulfur compounds per pound of available sulfur = $0.186 - 8.57 \times 10^{-7} S$ Where S=lb/hr of available sulfur
Over 1031	10,008 lb/hr

- (b) Compliance with subparagraph (a) of this paragraph shall be determined continuously by monitors which measure the total sulfur compounds, measured as sulfur dioxide, emitted by the facility and total available sulfur to the facility or by other equivalent methods approved by the Director.
- (5) For purposes of this Rule, the following counties are classified as Category I Counties: Jackson, Jefferson, and Mobile. The remaining counties in the state are classified as Category II Counties.
- (6) Compliance with these regulations is determined both by long-term material balances and stack sampling. New plants with an inlet stream containing more than 50 long tons per day of sulfur are required to install monitors to continuously determine the sulfur oxide emissions in terms of mass per unit of time.

- (7) In calculating the ground level concentration that results from short-term or emergency flaring, it shall be assumed that only 75 percent of the heat of combustion is used to heat the products of combustion.
- (8) **Air Quality Demonstration.** In addition to the requirements of paragraph (3) of this Rule, every owner or operator of a facility covered by Rule 335-3-5-.03 shall demonstrate, to the satisfaction of the Director, that the sulfur oxides emitted, either alone or in conjunction with other sources, will not interfere with attainment and maintenance of any primary or secondary ambient air quality standard.
- (9) To ensure that ambient air quality standards are met, an annual review of Sulfur Dioxide Category I and II Counties will be made by the staff. Initial Sulfur Dioxide Category Classifications and any subsequent changes to Sulfur Dioxide Category Classifications will be the subject of a public hearing.

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

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3 rd Revision	AUG 16, 2000	DEC 08, 2000	65 FR 76938

335-3-5-.04 Kraft Pulp Mills. (Adopted July 26, 1972)

- (1) **Applicability.** This part applies to manufacturing facilities for the pulping of wood and the preparation and recovery of associated chemicals by the kraft process, including combined recovery systems serving other processes such as neutral sulfite pulping.
- (2) No person shall cause or permit the emissions of total reduced sulfur (TRS) from recovery furnaces, lime kilns, digestors, and multiple effect evaporators to exceed 1.2 pounds (expressed as hydrogen sulfide on a dry gas basis) per ton of air-dried pulp from kraft pulp mills.
- (3) The pulp production rates for kraft pulp mills referred to in this Part shall be calculated as provided in Section 4.7.3.
- (4) Notwithstanding the specific limits set forth in this Part, in order to maintain the lowest possible emission of air contaminants, the highest and best practicable treatment and control for TRS currently available shall be provided for new kraft pulp mills.

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

History: Effective date: July 26, 1972.

Amended: May 29, 1973

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Original Reg	FEB 15, 1973	APR 23, 1974	39 FR 14338
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335-3-5-.05 Process Industries - General. *(Adopted May 5, 1976)*

- (1) **Applicability.** This part applies to facilities not regulated by Rules 335-3-5-.01 through 335-3-5-.04.
- (2) No person shall construct and operate a new or modified sulfur compound emission source that does not meet any and all applicable New Source Performance Standards and utilizes the best available control technology, with consideration to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility.
- (3) No person shall construct and operate a new or modified emissions source that will cause or contribute to a new condition such that either the primary or the secondary sulfur dioxide ambient air quality standards are exceeded in the area.

Author: James W. Cooper and John E. Daniel

Statutory Authority: Code of Alabama 1975, Secs. 22-28-14, 22-22A-5, 22-22A-5, 22-22A-6, and 22-22A-8.

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